

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

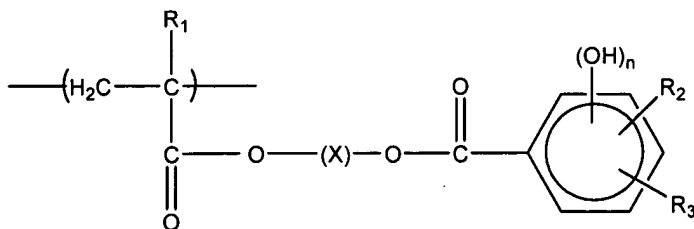
1. (currently amended): A polymerizable composition comprising:

a binder polymer containing at least an acid group having an acid dissociation constant (pKa) of 5.5 or more and a radical addition polymerizable group and having a weight average molecular weight in a range of 20,000 to 200,000; and

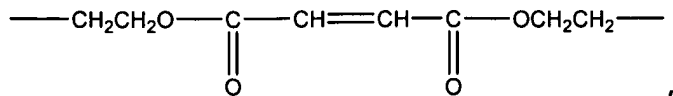
a radical-generating compound capable of generating a radical with light or heat,

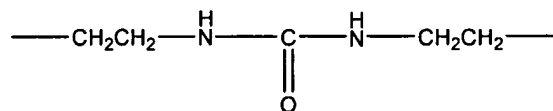
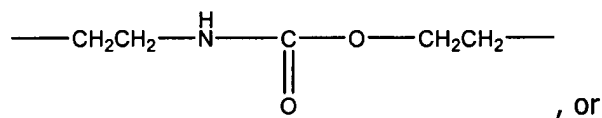
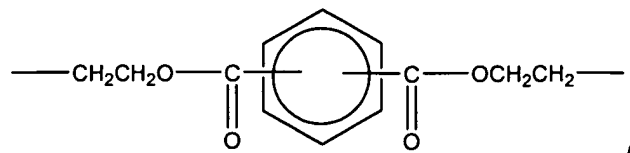
wherein the binder polymer comprises a structural unit that has the acid group and that is represented by a formula selected from the group consisting of formulae (2), (3), (4), (5), (6), (7) and (8):

Formula (2)



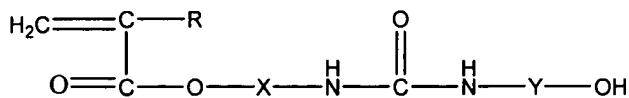
wherein in formula (2), X represents an alkylene group, a substituted alkylene group, $\text{---CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{---}$,





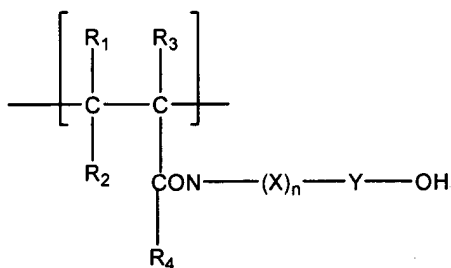
wherein R^1 represents a hydrogen atom, a halogen atom, or an alkyl group; each of R^2 and R^3 independently represents a hydrogen atom, a halogen atom, an alkyl group, a substituted alkyl group, an aromatic group, a substituted aromatic group, $-\text{OR}^4$, $-\text{COOR}^5$, $-\text{COONHR}^6$, $-\text{COR}^7$, or $-\text{CN}$; R^2 and R^3 may be bonded to each other to form a ring; each of R^4 to R^7 independently represents an alkyl group or an aromatic group; and n represents 2 or 3;

Formula (3)



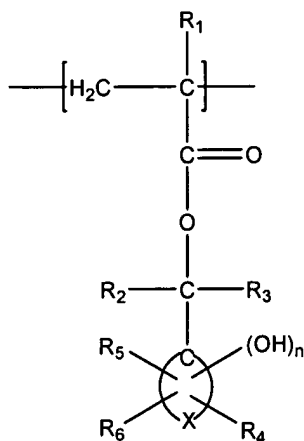
wherein in formula (3), R represents a hydrogen atom or an alkyl group; X represents a divalent linking group; and Y represents a divalent aromatic group which may have substituents;

Formula (4)



wherein in formula (4), each of R^1 and R^2 independently represents a hydrogen atom, an alkyl group, or a carboxylic acid group; R^3 represents a hydrogen atom, a halogen atom, or an alkyl group; R^4 represents a hydrogen atom, an alkyl group, a phenyl group, or an aralkyl group; X represents a divalent organic group linking a nitrogen atom to a carbon atom in an aromatic ring; n represents 0 or 1; and Y represents a phenylene group or a naphthylene group, each of which may have substituents;

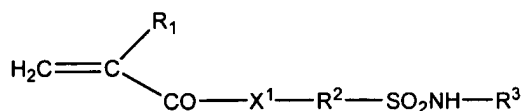
Formula (5)



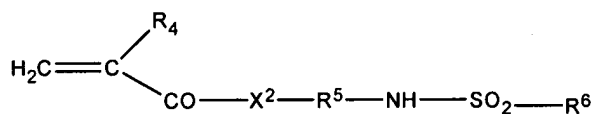
wherein in formula (5), R_1 represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl group; each of R_2 and R_3 independently represents a hydrogen atom, a halogen atom, an alkyl group, an alkoxyl group, or an aryl group; each of R^4 , R^5 and R^6 independently represents

a hydrogen atom, an alkyl group, an aryl group or a halogen atom; X represents an atom necessary for completing a monocyclic or polycyclic carbocyclic aromatic ring system; and n represents 1, 2 or 3;

Formula (6)

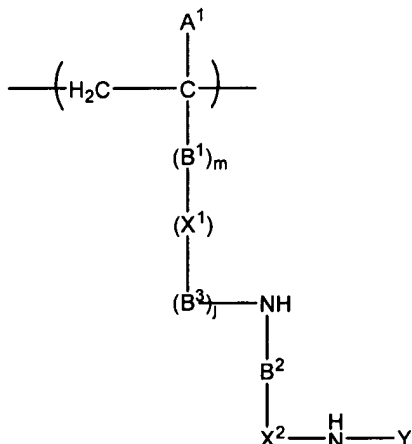


Formula (7)



wherein in formulae (6) and (7), each of X^1 and X^2 independently represents $-\text{O}-$ or $-\text{NR}^7-$; each of R^1 and R^4 independently represents $-\text{H}$ or $-\text{CH}_3$; each of R^2 and R^5 independently represents an alkylene group, a cycloalkylene group, an arylene group or an aralkylene group each having from 1 to 12 carbon atoms and each of which may have substituents; R^3 represents $-\text{H}$ or an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents; R^6 represents an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents; and R^7 represents a hydrogen atom or an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents;

Formula (8)



wherein in formula (8), A^1 represents a hydrogen atom, a halogen atom, or an alkyl group having from 1 to 4 carbon atoms; B^1 represents a phenylene group or a substituted phenylene group; B^2 represents an alkylene group having from 2 to 6 carbon atoms or a phenylene group, wherein each of which may have substituents; B^3 represents a divalent organic group; each of X^1 and X^2 independently represents ---CO--- or $\text{---SO}_2\text{---}$; Y represents ---CO-R^1 or $\text{---SO}_2\text{---R}^1$; R^1 represents an alkyl group, a substituted alkyl group, an aromatic group, or a substituted aromatic group; and each of m and j represents 0 or 1.

2. (original): A polymerizable composition according to claim 1, wherein the acid group and the radical addition polymerizable group are introduced as a side chain of the binder polymer.

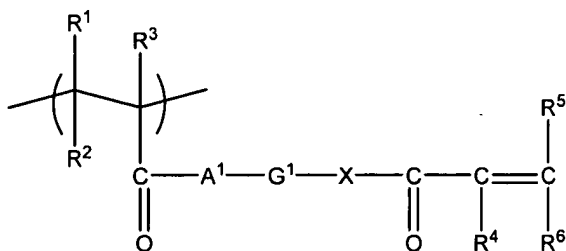
3. (original): A polymerizable composition according to claim 1, wherein the acid group and the radical addition polymerizable group are introduced into terminal ends of a main chain of the binder polymer.

4. (original): A polymerizable composition according to claim 1, wherein the pKa of the acid group is in a range from 7 to 11.5.

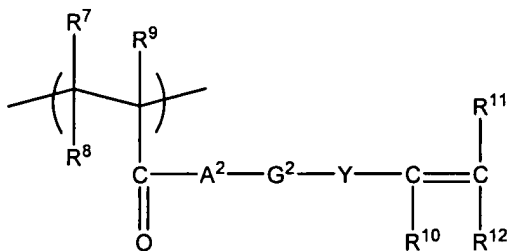
5-11. (canceled).

12. (previously presented): A polymerizable composition according to claim 1, wherein the binder polymer comprises at least one of a structural unit that includes the radical addition polymerizable group and that is represented by one of the following formulae (9) to (11):

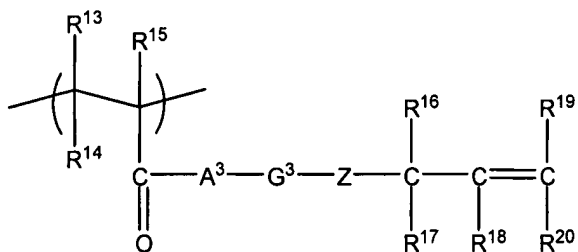
Formula (9)



Formula (10)



Formula (11)



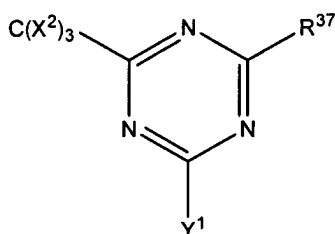
wherein in the above formulas, each of A¹, A² and A³ independently represents an oxygen atom, a sulfur atom, or -N(R²¹)-; R²¹ represents a hydrogen atom or an alkyl group which may have substituents; each of G¹, G² and G³ independently represents a divalent organic group; each of X and Z independently represents an oxygen atom, a sulfur atom, or -N(R²²)-; R²² represents a hydrogen atom or an alkyl group which may have substituents; Y represents an oxygen atom, a sulfur atom, a phenylene group which may have substituents, or -N(R²³)-; R²³ represents an alkyl group which may have substituents; and each of R¹ to R²⁰ independently represents a monovalent inorganic or organic group.

13. (original): A polymerizable composition according to claim 1, wherein a mixing ratio of structural units that have the acid groups relative to total structural units contained in the binder polymer is in a range of from 5 to 70 % by mole.

14. (original): A polymerizable composition according to claim 1, wherein a mixing ratio of structural units that have the radical addition polymerizable groups relative to total structural units contained in the binder polymer is in a range of from 5 to 95 % by mole.

15. (previously presented): A polymerizable composition according to claim 1, wherein the radical-generating compound contains at least one selected from the group consisting of an aromatic iodonium salt, an aromatic sulfonium salt, a titanocene compound, and a trihalomethyl-S-triazine compound represented by the following formula (17):

Formula (17)



wherein in formula (17), X^2 represents a halogen atom; Y^1 represents $-C(X^2)_3$, $-NH_2$, $-NHR^{38}$, $-NR^{38}$, or $-OR^{38}$; R^{38} represents an alkyl group, a substituted alkyl group, an aryl group, or a substituted aryl group; and R^{37} represents $-C(X^2)_3$, an alkyl group, a substituted alkyl group, an aryl group, a substituted aryl group, or a substituted alkenyl group.

16. (original): A polymerizable composition according to claim 1, further comprising a radical polymerizable compound.

17. (original): A polymerizable composition according to claim 16, wherein a mixing ratio of the binder polymer to the radical polymerizable compound is in the range of 1:0.05 to 1:3 by weight.

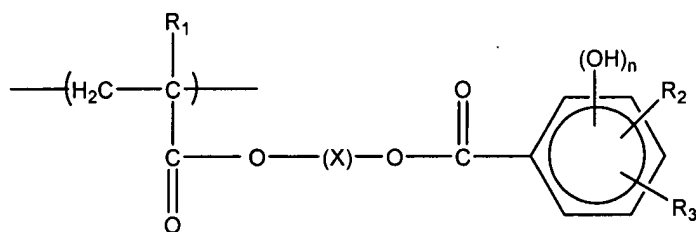
18. (previously presented): A negative-working planographic printing plate precursor, comprising a support having a recording layer containing a polymerizable composition provided thereon, wherein the polymerizable composition comprises:

a binder polymer containing an acid group having an acid dissociation constant (pKa) of 5.5 or more and a radical addition polymerizable group; and

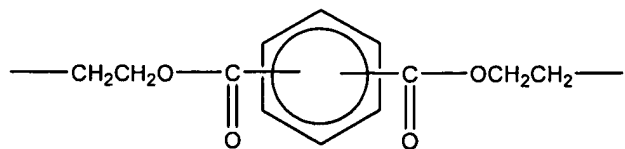
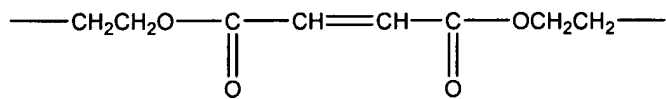
a radical-generating compound capable of generating radicals with light or heat,

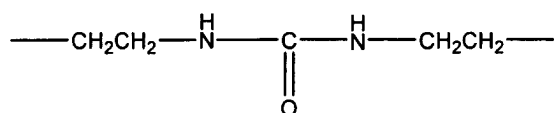
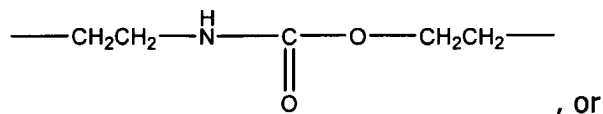
wherein the binder polymer comprises a structural unit that has the acid group and that is represented by a formula selected from the group consisting of formulas (2), (3), (4), (5), (6), (7) and (8):

Formula (2)



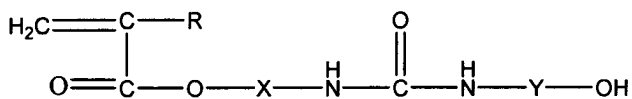
wherein in formula (2), X represents an alkylene group, a substituted alkylene group, $-CH_2CH_2OCH_2CH_2-$,





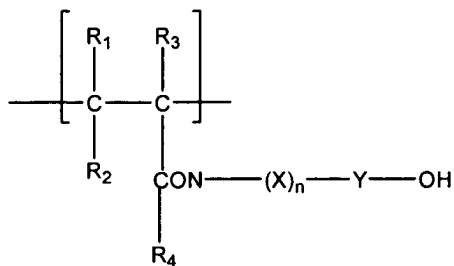
wherein R^1 represents a hydrogen atom, a halogen atom, or an alkyl group; each of R^2 and R^3 independently represents a hydrogen atom, a halogen atom, an alkyl group, a substituted alkyl group, an aromatic group, a substituted aromatic group, $-\text{OR}^4$, $-\text{COOR}^5$, $-\text{COONHR}^6$, $-\text{COR}^7$, or $-\text{CN}$; R^2 and R^3 may be bonded to each other to form a ring; each of R^4 to R^7 independently represents an alkyl group or an aromatic group; and n represents 2 or 3;

Formula (3)



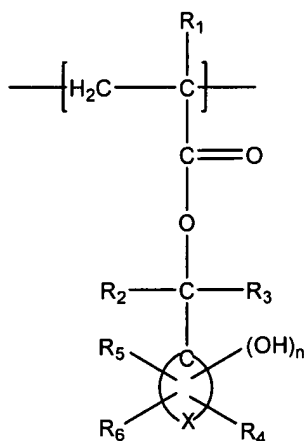
wherein in formula (3), R represents a hydrogen atom or an alkyl group; X represents a divalent linking group; and Y represents a divalent aromatic group which may have substituents;

Formula (4)



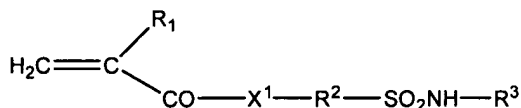
wherein in formula (4), each of R^1 and R^2 independently represents a hydrogen atom, an alkyl group, or a carboxylic acid group; R^3 represents a hydrogen atom, a halogen atom, or an alkyl group; R^4 represents a hydrogen atom, an alkyl group, a phenyl group, or an aralkyl group; X represents a divalent organic group linking a nitrogen atom to a carbon atom in an aromatic ring; n represents 0 or 1; and Y represents a phenylene group or a naphthylene group, each of which may have substituents;

Formula (5)

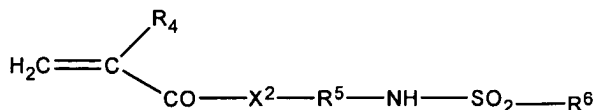


wherein in formula (5), R_1 represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl group; each of R_2 and R_3 independently represents a hydrogen atom, a halogen atom, an alkyl group, an alkoxy group, or an aryl group; each of R^4 , R^5 and R^6 independently represents a hydrogen atom, an alkyl group, an aryl group or a halogen atom; X represents an atom necessary for completing a monocyclic or polycyclic carbocyclic aromatic ring system; and n represents 1, 2 or 3;

Formula (6)

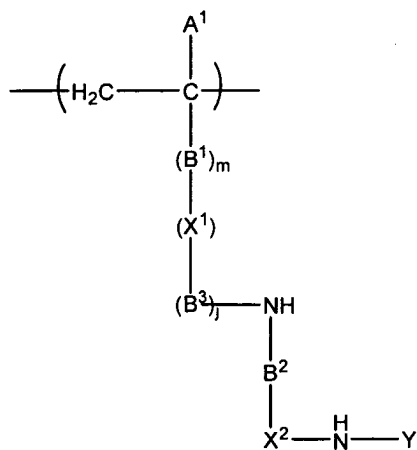


Formula (7)



wherein in formulae (6) and (7), each of X^1 and X^2 independently represents $-\text{O}-$ or $-\text{NR}^7-$; each of R^1 and R^4 independently represents $-\text{H}$ or $-\text{CH}_3$; each of R^2 and R^5 independently represents an alkylene group, a cycloalkylene group, an arylene group or an aralkylene group each having from 1 to 12 carbon atoms and each of which may have substituents; R^3 represents $-\text{H}$ or an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents; R^6 represents an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents; and R^7 represents a hydrogen atom or an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents;

Formula (8)



wherein in formula (8), A^1 represents a hydrogen atom, a halogen atom, or an alkyl group having from 1 to 4 carbon atoms; B^1 represents a phenylene group or a substituted phenylene group; B^2 represents an alkylene group having from 2 to 6 carbon atoms or a phenylene group, wherein each of which may have substituents; B^3 represents a divalent organic group; each of X^1 and X^2 independently represents $-\text{CO}-$ or $-\text{SO}_2-$; Y represents $-\text{CO}-R^1$ or $-\text{SO}_2-R^1$; R^1 represents an alkyl group, a substituted alkyl group, an aromatic group, or a substituted aromatic group; and each of m and j represents 0 or 1.

19. (new): The polymerizable composition according to claim 1, wherein the weight average molecular weight of the binder polymer is in a range of 78,000 to 175,000.

20. (new): The negative-working planographic printing plate precursor according to claim 18, wherein a weight average molecular weight of the binder polymer is in a range of 20,000 to 200,000.